ACCIDENT

Aircraft Type and Registration:	Vans RV-7A, G-CDRM
No & Type of Engines:	1 Lycoming O-360-A1A piston engine
Year of Manufacture:	2006
Date & Time (UTC):	9 June 2007 at 1445 hrs
Location:	Croft Farm, 10 miles north of Gloucester
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - None
Nature of Damage:	Substantial damage to airframe and engine shock-loaded
Commander's Licence:	Private Pilot's Licence
Commander's Age:	56 years
Commander's Flying Experience:	807 hours (of which 101 were on type) Last 90 days - 20 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

The aircraft touched down normally on the threshold of Runway 09 at Croft Farm. During the landing roll, the aircraft encountered a series of undulations in the grass runway surface and the nose landing gear forks dug in. The aircraft pitched over and came to rest inverted on the runway.

History of the flight

The pilot and a colleague flew from Halfpenny Green to Croft Farm strip to attend a 'fly in'. Croft Farm has a single runway orientated 09/27, 570 m in length and 18 m wide; its grass surface was described by the pilot as dry and firm. The daily inspection of the aircraft was carried out by the pilot and it was found to be fully serviceable. The nose landing gear wheel spat had been removed for modification.

The weather at Croft Farm was good with a light wind, visibility in excess of 10 km and no cloud below 5,000 ft. The pilot contacted Croft Farm on the radio and was requested to join for Runway 09. He reduced speed downwind and lowered two of the three stages of flap before turning onto the final approach. The third stage of flap was then lowered and the IAS reduced to 80 kt, the normal approach speed.

The aircraft touched down at the runway threshold on main landing gear wheels. The grass surface was undulating and the pilot experienced some difficulty in

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settling the nosewheel before applying the wheel brakes. Approximately halfway down the runway the aircraft had slowed enough to cause the pilot no concerns about completing a successful landing, although the aircraft had migrated to the left of the runway centreline. There was then another undulation which caused the nosewheel to lift off the ground before dropping back down again. The nosewheel attachment forks contacted the ground causing the aircraft to pitch down rapidly. The nose landing gear leg bent back, the propeller contacted the runway and the aircraft pitched over onto its back.

The Airfield Rescue and Fire Fighting Service attended the scene immediately and with the assistance of others managed to raise the left wing, which allowed those onboard to escape.

Having inspected the area after the accident the pilot noted a furrow made by the nose landing gear some 10 ft long. At the beginning of the furrow was a small depression in the runway surface, into which the nosewheel appeared to have dropped.

Analysis

The pilot considered that the touchdown was normal but he was surprised that he experienced so much difficulty in settling the nosewheel on the runway. He believed that the depression in the runway surface may have initiated the marked nose-down pitch, and considered that his braking may have increased this effect. The nosewheel was of a castering design but there was no damage to indicate it had turned across the direction of travel.

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